

#### ABSTRACT OF THE DISCLOSURE

A laser measurement apparatus for carrying out measurement using a laser beam that is capable of performing various types of measurement with a simple structure is provided. Optical signal processing units 103, 104, 105 output laser beams  $\lambda_1$ ,  $\lambda_2$ ,  $\lambda_3$  having different wavelengths via a common optical path A toward an object to be measured, and detect the laser beams being reflected by a corner cube 100 attached to the object to be measured. A control unit 102 controls motors 110, 111 so that the laser beams return to a predetermined position of an optical position sensing device 117 of an optical signal processing unit 103, according to which the direction of a reflecting mirror 112 is controlled so that the laser beams follow the object. The control unit 102 computes the distance to the object, or the shape, position, speed etc. of the object based on signals detected at the optical signal processing units 104, 105.